

Application No. 10/617,681

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

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Listing of Claims:

1-55. (Canceled)

56. (Currently amended) A method of starting up disk drive spindle motors in an array disk system having disk drives organized into groups which are started up separately so as to reduce the amount of electric current required by the array disk system, said method comprising:

supplying current from a power supply to start up a first group of said spindle motors initially, said first group of said spindle motors started up initially being more than one spindle motor and less than all of said spindle motors; and

then supplying current, from the same power supply that supplied current to said first group of said spindle motors initially, to additionally start up one or more of said spindle motors other than said first group of said spindle motors started up initially:

wherein the current that is supplied to start up said first group of said spindle motors initially, and the current that is supplied to additionally start up said one or more of said spindle motors, are each less than the current that would be required to start up all of the spindle motors in the array disk system at the same time; and

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wherein a sum of a time that is required for said first group of spindle motors to reach steady-state from start-up by supplying said current initially, and a time that is required for said one or more of said spindle motors additionally started up to reach steady state from start-up by supplying current from said power supply, is less than a time that would be required to start up all of said spindle motors in the array disk system one-by-one.

57. (Previously presented) A method of starting up disk drive spindle motors in an array disk system as claimed in claim 56,

wherein said supplying steps are performed such that a spindle motor in a start-up is supplied with a start-up current, and a spindle motor at steady-state is supplied with a steady-state current that is lower than said start-up current.

58. (Currently amended) An array disk system having disk drives organized into groups which are started up separately so as to reduce the amount of electric current required thereby, said system comprising:

a plurality of disk drive spindle motors; and  
a power supply electrically connected to said plurality of disk drive spindle motors,

wherein said power supply supplies current to start up a first group of said spindle motors initially, said first group of said spindle motors started up initially being more than one spindle motor and less than all of said spindle motors, and then

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additionally supplies current to start up one or more of said spindle motors other than said first group of said spindle motors started up initially;

wherein the current that is supplied to start up said first group of said spindle motors initially, and the current that is supplied to additionally start up said one or more of said spindle motors, are each less than the current that would be required to start up all of the spindle motors in the array disk system at the same time; and

wherein a sum of a time that is required for said first group of spindle motors to reach steady-state from start-up by supplying said current initially, and a time that is required for said one or more of said spindle motors additionally started up to reach steady state from start-up by supplying current from said power supply, is less than a time that would be required to start up all of said spindle motors in the array disk system one-by-one.

59. (Previously presented) An array disk system as claimed in claim 58, wherein said power supply supplies a spindle motor in a start-up with a start-up current, and supplies a spindle motor at steady-state with a steady-state current that is lower than said start-up current.

60. (Previously presented) A method of starting up disk drive spindle motors in an array disk system as claimed in claim 56,

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wherein the time between power switch-on of the overall array disk system and start of driving the spindle motors is set independently for each of the groups of the disk drives so as to prevent overlap of the initial currents among the groups.

61. (Previously presented) A method of starting up disk drive spindle motors in an array disk system as claimed in claim 56,

wherein the number of the disk drives constituting the individual groups decreases in the order that the groups are started up.

62. (Previously presented) A method of starting up disk drive spindle motors in an array disk system as claimed in claim 61,

wherein after the start-up of the first group of spindle motors, the reserve power of a power supply that supplies the current to the first group of spindle motors is equal to the rated capacity of the power supply minus the amount of current required for maintaining the disk drives of the first group in the steady state.

63. (Previously presented) An array disk system as claimed in claim 58,  
wherein the time between power switch-on of the overall array disk system and start of driving the spindle motors is set independently for each of the groups of the disk drives so as to prevent overlap of the initial currents among the groups.

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64. (Previously presented) An array disk system as claimed in claim 58, wherein the number of the disk drives constituting the individual groups decreases in the order that the groups are started up.

65. (Previously presented) An array disk system as claimed in claim 64, wherein the reserve power of the power supply after the start-up of the first group is equal to the rated capacity of the power supply minus the amount of current required for maintaining the disk drives of the first group in the steady state.